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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,650	08/01/2003	Malika Dothresa Carter	HSJ920030194US1	3577

7590 01/21/2005  
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EXAMINER
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PRUCHNIC, STANLEY J

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 01/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-A

# Office Action Summary

Application No.

10/632,650

Applicant(s)

CARTER ET AL.

Examiner

Stanley J. Pruchnic, Jr.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004 and 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's argument, to summarize, is that
  - (i) the present invention provides for ferromagnetic slugs which are fabricated principally by melting two metals;
  - (ii) The composition of each final slug is easy to control, and the property of each final slug depends much less on extrinsic factors, in comparison to the slugs disclosed by TCHERNEV; and
  - (iii) the intended use of the set of standards for VTGA calibration.
3. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (*i.e.*, "fabricated principally by melting two metals"; and "the property of each final slug depends much less on extrinsic factors") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, TCHERNEV discloses ferromagnetic slugs prepared by melting together ("arc-melted"; Col. 5, Line 56 through Col. 6, Line 5) the starting materials. Furthermore, TCHERNEV discloses (Col. 2, Lines 37-66) making batches of the material, and then measuring the resulting transition temperatures, in order to provide acceptable accuracy. See also, for example, U. S. Patent No. 3,413,540 A (VANSANT) which discloses that the method of controlling the amounts of alloy added to a ferromagnetic material for changing the Curie point is known in the prior art (Col. 2, Lines 9-24).
4. In response to applicant's argument that the set of standards comprise a plurality of ferromagnetic slugs for the temperature calibration of a vacuum thermogravimetric analyzer (VTGA): a recitation of the intended use of the claimed invention must result in

a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the present case, the slugs disclosed by TCHERNEV are capable of being used for calibration of a vacuum thermogravimetric analyzer (VTGA) since they achieve a preselected Curie transition temperature and it is within the level of ordinary skill in the art to calibrate the set of standards to provide a desired accuracy in the range of temperatures required for the particular application of interest, as described below.

### ***Drawings***

5. The drawings were received on 05 October 2004. The Examiner APPROVES these drawings.

### ***Claim Objections***

6. Claims 1, 2 and 8 are FINALLY objected to because of the following informalities:

- In Claim 1, in Line 6, perhaps the word "Curie" before "temperature" should be deleted and replaced therefor by --slug-- in order to more clearly describe the invention, since it is considered that the --slug temperature-- varies within a temperature range, but "said Curie temperature" is single-valued, a certain one of the --slug temperature values--.
- Similarly, in Claim 1, in Line 11, perhaps the word "Curie" before "temperature" should be deleted and replaced therefor by --slug--.
- Also, in Claim 2, in Line 2, perhaps the phrase "Curie temps" before the phrase "is between" should be deleted and replaced therefor by -- slug temperature values-- in order to more clearly describe the invention.
- Similarly, in Claim 8, in Line 7, perhaps the word "Curie" before "temperature" should be deleted and replaced therefor by --slug-- in order to more clearly describe the invention.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1-10** are FINALLY rejected under 35 U.S.C. 103(a) as being unpatentable over **TCHERNEV** (U. S. Patent No. 4,208,911) in view of the article "Use of magnetic transitions in temperature calibration and performance evaluation of thermogravimetric systems," *Thermochimica Acta* (1970, no month), 1(1), 29-38, by **NOREM et al.**, hereinafter **NOREM**).

**TCHERNEV** discloses or suggests all the limitations as claimed by Applicant in Claims 1-10, including the limitations:

Regarding **Claim 1**, **TCHERNEV** discloses a set of standards (Fig. 1; Col. 1, Lines 13-39), comprising:

a plurality of ferromagnetic slugs, each of said ferromagnetic slugs having a Curie temperature wherein the value of said Curie temperature falls within a preselected range of Curie temperature values (Col. 2, Lines 64-66),

wherein each slug is comprised of an alloy containing an amount of a ferromagnetic constituent and an amount of a non-ferromagnetic constituent (Col. 2, Lines 16-43), and

wherein the amounts of said ferromagnetic constituent and non-ferromagnetic constituent are selected (Col. 4, Lines 65-68) to provide a ferromagnetic slug having a Curie temperature within said preselected range of Curie temperature values (Fig. 1; Col. 4, Lines 49-51) as claimed by Applicant in **Claim 1**.

Further regarding **Claim 2**, **TCHERNEV** discloses a set of standards wherein said preselected range of Curie temperature values is between from about 50 C (Fig. 1; wherein each data point represents one of the set of standards) to about 200 C.

Further regarding **Claim 3**, **TCHERNEV** discloses said ferromagnetic constituent is selected from the group consisting of Fe, Co, Ni and Gd (**TCHERNEV** discloses Nickel, Ni).

Further regarding **Claim 4**, **TCHERNEV** discloses said ferromagnetic constituent is Ni and said non-ferromagnetic constituent is selected from the group consisting of Al, Cr, Mo, Ti, W, Mn, Zn and Cu (Col. 2, Line 67 through Col. 3, Line 22, and in particular, Zn is selected by **TCHERNEV** in the exemplar of Fig. 1).

Further regarding **Claims 5-6**, **TCHERNEV** teaches that "T" in the general formula for a spinel ferrite of the invention (Col. 2, last line) may include any metal from the "R" group that is non-ferromagnetic (e.g., Cu) wherein the "R" group includes, the elements having atomic numbers 22-30, thus inherently including Nickel (Ni, atomic number 28) and Copper (Cu, atomic number 29). Thus, **TCHERNEV** discloses said ferromagnetic constituent is Co or Fe and said non-ferromagnetic constituent is selected from the groups as claimed by Applicant since these are members of the (non-ferromagnetic) group "T" defined by **TCHERNEV** (Col. 2, Line 67 through Col. 3, Line 22, and in particular, Zn is selected by **TCHERNEV** in the exemplar of Fig. 1).

Further regarding **Claim 7**, **TCHERNEV** discloses said ferromagnetic slugs are annealed (Col. 6, Lines 2-11) to remove voids and imperfections in the crystalline structure, which would result in removing spurious magnetic transitions.

Regarding **Claim 8: TCHERNEV** discloses or suggests a set of standards, comprising:

a plurality of ferromagnetic slugs, each of said ferromagnetic slugs having a Curie temperature wherein the value of said Curie temperature falls within a preselected range of Curie temperature values, wherein each slug is comprised of an alloy containing Ni and Cu as claimed by Applicant in **Claim 8**.

Further regarding **Claim 9, TCHERNEV** discloses said ferromagnetic slugs are annealed (Col. 6, Lines 2-11) to remove voids and imperfections in the crystalline structure, which would result in removing spurious magnetic transitions.

**TCHERNEV**, as described above, does not disclose the intended use of the slugs for the temperature calibration of a vacuum thermogravimetric analyzer (VTGA) as claimed by Applicant in each of **Claims 1 and 8**.

**NOREM** discloses that it is known in the art of thermogravimetric analysis to use a set of standard materials having accurately known Curie points for temperature calibration of TGA systems (Page 31, paragraph labeled "(5)") so that several standard materials can be run in the same experiment. Moreover, in the last paragraph of Page 34, **NOREM** teaches that magnetic standards are known for use when radiation is the dominant mechanism for heat transfer in a TGA apparatus.

**NOREM** further teaches or suggests that it is advantageous to use a set of standards in order to benefit from calibrating the TGA in the temperature range of intended use.

**NOREM** is evidence that ordinary workers in the field of thermogravimetric analysis would recognize the benefit of providing multiple slugs for the temperature calibration as taught by **NOREM** and use the slugs produced by **TCHERNEV** in order to calibrate a VTGA for use in a temperature range of intended use as suggested by **TCHERNEV**.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the slugs of **TCHERNEV** for the calibration of the VTGA in order to benefit from the calibration of the VTGA in the temperature range of intended use as taught by **NOREM**.

**TCHERNEV** does not disclose the amount of Cu is within the range of 15% to 28% as claimed by Applicant in **Claim 8** or that the slugs are annealed at approximately 300C for approximately 1 Hr, as claimed by Applicant in **Claim 10**.

**TCHERNEV** already disclosed annealing the slugs and selecting amounts of materials in order to obtain a desired Curie transition temperature.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the amount of Cu (atomic number 29) to make an equivalent alloy containing an amount of a ferromagnetic constituent (Ni) and an amount of a non-ferromagnetic constituent (Cu), as taught by TCHERNEV, and to choose an amount of Cu in the range of 15% to 28%, by routine experimentation, in order to form slugs having the Curie transition temperature desired, and to optimize the conditions for annealing the slugs at approximately 300C for approximately 1 Hr by routine experimentation, in order to remove voids and imperfections in the crystalline structure as taught by TCHERNEV.

### ***Conclusion***

10. It is noted, but not relied on, that Applicant has already admitted in the Specification, Page 5, Lines 10-11) that Monel, a CuNi alloy with about 28-30% by weight of Cu, has been used as a standard for the Curie point magnetic transition in a TGA.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in a form PTO-892 and not mentioned above disclose related devices and methods. U. S. Patent No. 5,089,159 A is related to the previously applied TCHERNEV patent. The paper by MOSKALEWICZ also disclosed the use of magnetic materials having Curie point transitions for temperature calibration in thermogravimetric systems.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2859

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanley J. Pruchnic, Jr., whose telephone number is **(571) 272-2248**. The examiner can normally be reached on weekdays (Monday through Friday) from 7:30 AM to 4:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached at **(571) 272-2245**.

The **Official FAX** number for Technology Center 2800 is **(703) 872-9306** for **all official communications**.

Any inquiry of a general nature or relating to the status of this application or proceeding may be directed to the official USPTO website at **<http://www.uspto.gov/>** or you may call the **USPTO Call Center** at **800-786-9199** or 703-308-4357. The Technology Center 2800 Customer Service FAX phone number is (703) 872-9317.

The cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources.

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1/17/05